

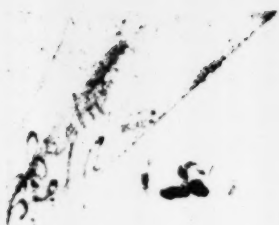
OF (2)
THE CIRCUM-
FERENCE OF
THE EARTH: (1)

OR,
A Treatise of the North-
east passage.



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1612.



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Fo



Hough our particular opinion of the probability, that after the vn-blest indeauours of so manie of our Countrie

^{we}men sought for the North-west passage, were reason good enough for our Aduentures, to merite (at the worst) by making knowne th'impossibilitie, the thanks of future Ages: Yet now, when persons of more eminence are interested in the prosecution of that Action; least after good successe, as in like cases the enuie of the world, commend the Fortune rather then the Iudgement

of the Vndertakers : wee are aduised to shew some such as you, a litle of our Reason, by the sufficiencye whereof, you (as we wish) will iudge vs, & our Enterprize, though an vnlook'd for ill euent, should furnish other men with stronger Arguments then yet they haue against vs.

For yet (setting aside some one, *it may be*, and that fortified especially with this) the maine Obiection is, that all our moderne Globes and Mappes doe either shew no passage, or else so high into the North, and long into the West, that Cold and Ice, and Fogges, and so forth, will make it of no vte.

To which wee iustly might reply; that it hath euer beene, the custome of Describers of the World in remote partes, to set downe Land or Sea out of their owne imagination, with Giants, Pigmies, Monsters, and miraculous reportes of fabulous Authors. Or if weelist, to let them see how poore it is to trust in Pictures: could tell them of those Globes that

that make *America* and *Asia* all one Continent, euen vnder the Tropicke : Or of those Maps that seuer them by a small *Fretum* onely ; that since is found to be a vaste and spacious Sea : Or of those that ioyne *America* and *Grond-land*, betweene which, *Danis*, and other of our Countymen, discovered a large Passage: Or of those that force the Backe of *Brasil* by the Streights of *Mazellan*, to trend so strangely Westward, when M. *Cauendish* found that Coast to turne immediatly vp to the North, inclining to the East : Or of other as grosse errors, which later Voyages haue mended.

By which, those men might be perswaded from ours, becaule it is a new Discoverie to rectifie their Cardes, that make no mention of our Streights found in () a Latitude free from feare of danger, cutting through the body of *America*, 200. or 300 Leagues, vnto an open Sea, that shewed a great and hollow Billow, and brought a Flood that

rose 5. Faddome. The rather, for that it agreeth iustly with the *Portingall* Card, taken in the late *Queenes* time out of a *Carricke*. And with the intelligence which Sir *Marinus Furber* had long since from a *Portingall* in *Gunie*, that sayd, hee had past it :
 3 And with the generall confelssion of Pilots now at *Lisbon*, yeelding to the newes: And with vnpartiall Stories, telling that the Admirall of *D. Garcia Geoffroy Loaysa* of *Cute-Real*, in the time of *Charles* the fift, by the Coast of *Bacalos* and *Labrador*, went to the *Moluccaes*.

But because some (that holde the place, at least of) good Sea-men, and Maisters in the Studie of *Cosmographie*, deliuer their opinion without reasons, that there yet remaine on the North of *America*, many hundred Leagues for vs to passe: Wee hold it not amisse to shew you why (besides our late experience) wee thinke not so, in this succeeding short discourse.

Of



OF THE CIR- CUMFERENCE of the Earth.

VNlearned men are now
at length assured by
the renowned Voya-
ges of sir *Francis Drake*
and *M. Cavendish*, and
other worthy Persons, that in the
last age, compassed the World: As
aunciently Mathematicians were by
the roundnesse of the shadow in the
Eclipse of the Moone; That the
Forme or Figure which God gaue
vnto the Sea and Earth, when his
Wisedome set the Waters and dry
Land apart, was *Gleabe-like* or *Spha-
ricall*.

Wherein it is agreed there are two
A s. Poynts,

Poynts, correspondent to the North and South Poles of the Heauens. of easie creation in a Solide of that Nature, from which Centers by describing seuerall Circles, we deriue our Paralels, whereof the largest in extent, must of necessitie fall iust in the midd'st; the rest infalkably growing lesser and lesser, as they draw neerer and neerer to those Poles.

Whereas our Meridians being Circles that doe euer meete in both those poyntes of North and South, and so deuide the Orbe into iust halfes, though they be not æquidistant, yet are euer of one equall Circuite to the greatest Paral-ll, which we call the *Æquinoctiall*.

In which Line, all men obseruing that the Sunne in foure and twentie howers was carryed round; and the most Learned, that one hower tooke vp 300. Leagues, or 900. Miles. It was concluded, that the Sunnes whole course was 24. times so much: so that the common best opinion of the greatest Compasse of the World, became

became 7200. L. or 21600. M.

According to which Computation, Sea-men and Trauelers that goe directly North or South, doe finde their Eleuation to alter one Degree of the 360. for 20. L. of way; and hauing sure meanes to tell how many Degrees or Partes of their Meridian they are gone N. or S. They can proportion well enough their distaunce in Latitude, to be so many L. or Miles.

But in their course of *Longitude*, (which is from East to West) for want of Fixed helpes, they are constrained to turne backward, and by reckoning their L. or M. of way, to make accompt of so many parts or Degrees of their *Paralell*: But hauing not had due consideration of the aboue saide lessening of *Paralels*, to distribute consequently fewer Miles or Leagues to each Degree, besides the too vncertaine ground; it hath fallen out that Lands sette forth in Gloabes or Mappes, from such erroneous Cardes or Computations,

tions, as touching Longitude or Distance East and West, are most extremely false, especially in new discovered Northerne and Southerne Countries.

For which cause (setting by the authoritie of Handy-workes) the true *Circumference* of the Earth is to be lookt for in the Histories of such as traueled to describe the Worlde: Among the which in auncient time, the men that layde the firmest and most Artificiall grounds, and neereſt to the beſt of *Moderne*, were *Ptolomæus Alexandrinus*: And hee whom *Ptolomey* confutes *Marinus Tyrius*, the one of them by a Heauenly way of *Eclipses*, moſt exact (if well obserued) thus argued. Such an Eclipse happen'd at M. Hora 8. and at N. at 9. therefore M. and N. differ in Longitude one hower, that is, the 24. part of the *Aequinoctiall*, that is, 15. Degrees, contayning every one ſome 60. Miles. But on the contrary, *Marinus Tyrius* proceeded thus: Such a man went from M. to N. Ver-

sus occasum, or from N. to M. *Uersus exortum* 7500. *Stadia*, whereof 500. are about 60. Miles, or one Degree of the *Aequinoctiall*; from which experience hee concluded, therefore M. and N. did differ 15. Degrees, that is, one Hower in *Longitude*. Which course how euer *Mechanicall* as wee say, and seldome or neuer exact: Yet on firme Land, by small helps given to a Man of ordinary vnderstanding, may easily be freed from a grosse errour: Whereas wee must confesse *Ptolomey* his learned Method is of such difficile obseruing, that errour soone creepes in, and euery small one, breeds a great mistaking.

And therefore seeing (either way) *Geography* dependes on the reports of Trauellers (which *Ptolomey* call's *Historians Peregrinationis*,) and Trauellours be seldome *Mathematicians*, but Merchants, Saylours, Souldiers, men that may vse common Rules & Instruments, not subtilties of nice and curious practise. There are that
doe

doe professe, they hold *Ptolomey* his way much fitter, from the relations of Learned men, & Countries where good Artes are flourishing, to rectifie precedent obseruations, then to delineate or set downe by heare-say, the distances from East to West, of far remote newly discovered Countries. Nay, that confesse (vnder correction of the Learned World that hath receiued it) they are not yet so fully well perswaded of *Ptolomey* his bounding the old World of *Europe*, *Africa*, and *Asia*, betweene a *Meridian* of the *Fortunate Islands*, and 12. howers or 180. Degrees, but rather doe approoue *Marmus Tyrinus* his extending *Asia* into the East, as farre as 15. Howers, & that for these reasons.

First.

If those men conceiue a right, that gesse that *Ptolomey* for his abode in *Alexandria*, did stile himselfe *Alexandrinus*, in emulation of *Marmus*, called *Tyrinus*, from the Towne of *Tyre*. It cannot be denied but the Merchants of that Port were fellows

lowes vnto Princes, and had in those dayes greater Trade then any ; so that *Marinus* living there, was like to haue much better information then an other in an other corner ; especially being more auncient, and neerer to the *Assirian* and *Persian* Monarchies, to the Iournies of *Alexander*, *Hercules*, and *Bacchus*, and the businesse then most into the East. Hee could not but haue better helps then *Ptolomey*, that liued when all went Westward.

2.ly.

The Merchauntes then traouelling ouer firme Land, through plaine and open Countries by directions of the Heauens, wherein the men of those Times and Territories were best read ; they were the better able to make perfect Iournals of their way, and consequently *Marinus* truer Computation of the Longitude of Places.

Since *Ptolomey* himselfe confesseth, that the Landes from the *Fortunate Islands*, to the passage of the Riuer *Euphrates* through *Hierapolis*, were
rightly

3.ly.

rightly laide by *Tyrius*, being gathered from mens Voyages West-ward ouer Seas, and through the Wooddie, Mountainous, barren and then barbarous partes of *Europa*: why should we not thinke his information was as good, and more frequent from the Easterne richest Countries of the World; and so belecue as well of his accompt *Ad Turrim Lapidream*, and thence *Ad Sinarum Metropolim*? Nothing doubting what euer *Ptolomey* coniecture, his care to examine mens Relations, ere hee gaue them credite, since though his worke unhappily appeare not, yet out of his confuters mouth, wee heare hee did reiect *Philemons* forged Tale of *Ireland*s greatnesse.

Fourthly.

How confidently soeuer *Ptolomey*, with stronger Arguments then those against his *Longitude*, condemne *Marinus Tyrius* for forcing *Africa*, as touching *Latitude* to reach beyonde the *Tropicke* of *Capricornus*; whereas he will allow it to extende to not full 17. partes: Yet now infallible experi-

perience hath taught vs, that *Martius* in that then most difficult poynt, was much the better informed, a faire occasion to doubt *Ptolomey*, and trust him in the other.

5. ly. That *Ptolomey* was strangely abused in his vnderstanding of those partes, appeareth plainely, by his making *Asia* to turne downe to the South, and winding round to ioyn with *Africa*, conceiuing our great Sea of *Zur*, for that he heard but of a peece to be a Bay or *Shims*, which indeed he tearmed *Magnus*; but reported to be lesse then either *Gangesius* or *Persicus*.

Last of all, seeing that although *Pomponius Mela*, & other of the Ancient, besides the late discovered Trueth it selfe, make *Asia* to reach vnto the Sea; yet *Ptolomey* doth bound it East-ward *Terra incognita*; Why might not *Martius* proportion more Degrees or Howers, were it but for that Land vnkowne; sure we are, *Ptolomey* his fardest *Mordian* doth leaue a great part of *China* East,

B.

his

his *Sinus Magnus* being but a peece of our South Sea, betweene *Malacca* and the *Moluccaes*, and his *Aurea Chersonesus*, in trueth no other then the Moderne *Sumatra*, though by some Learned men mistaken for his *Taprobane*: and thus unhappily wee fall vpon another Paradoxe; yet for the trueths sake, can not but deliuer our opinion, that, that which hee calde *Taprobane*, was our now *Ceilam*. Not because *Burrinus*, or *Corsanus*, or *Darrivinus*, or at last *Ortelius* conceiued so; nor yet for the plentie of Elephants, and other Riches which *Iulianus* gaue to his *Taprobane*, & are in trueth in our *Ceilam*: Nor for the neerenesse of the sound or name of the auncient Inhabitanes of *Taprobane*, called by him *Salij*, and his opposite Promontory in *India* tearmed *Cory*, to our *Ceilam*, and the neighbour *C. Comoru*: but for these, as we thinke vnanswérable reasons.

First.

The Latitude (wherein as *Vadianus* and other, rightly iudge *Ptolmey* err'd least) of our *Ceilam* being about

10. degrees Northerly, agreeeth much better with *Ptolomey* his *Taprobane*, then *Sumatra*, that like his *Anvia* (*Chersonesus*), lyeth vnder the Line.

2^{ly}. The Sholes and Dround-lands about our *Ceslam* shew, that perhaps it hath been greater, if any should too strictly vrge *Plinie* his Magnitude of *Taprobane*, which *Ptolomey* placeth but a few degrees East-ward from his Riuer *Indus*, ouer against that part of *India* where the *Brachmanoj* *Magoj* liu'd: and so is our *Ceslam* now situate from that Riuer, and opposite to the *Indians*; whose Priestes are called *Bachmenes*.

3^{ly}. Before his *Taprobane*, *Ptolomey* placeth 1300. little Islandes an vnusuall Sea-marke, nowhere in the world but before our *Ceslam*, to wit, the Isles of *Maldinar*.

4^{ly}. *Ptolomey* his *Taprobane* lay betweene the Mouths of the Riuer *Indus*, and *Ganges*, almost indifferently, as our *Ceslam* now doeth, whereas *Sumatra* not onely is beyond the Riuer *Ganges*, but our *Golfo de Bengala*,

his *Sinus Ganget. cus.*

to

I But the Learned *Mercator* was of other minde, whose sentence *Magnus* & other *Geographers* approoue: Hee takes *Sumatra* to be *Taprobane*, and our *Japan* for *Aurea Chersonesus*, &c.

Rep.

The truth is, in his Vniuersall Mappe, as in the quarter Cardes which *Honorus* drew from thence, the labour is so great to fitte the new discovered Countries in those Seas, to *Ptolemeys* olde names, that hee that will but read Iudiciously *Ptoleme* himselfe, be it of *Mercators* owne edition, shall soone perceiue the errors which we wish that Learned man had not committed: For, for a taste, what can be weaker, then to deny *Sumatra* to be *Chersonesus*, because it is not a *Peninsula*, although the broken Grounds about it, & the neerenesse to the Maine, witnesse perhaps it was: And although the Latitude and other circumstaunces accord; when the same hand doth make *Japan* that hath no colour, no resem-

resemblance of an *Istmos*, lying farre from the Continent in 36. Degrees, of N. Elevation to be *Ptolomey* his *Chrys* or *Chersonesus* that was vnder the *Aequinoctiall*.

I but according to *Ptolomey*, *Chersonesus* must lie beyonde the River *Ganges*, as *Taprobane* on this side: and therefore *Mercator* finding the River *Cantam* to be *Ganges*, had reason to reconcile *Ptolomey* vnto himselfe. &c.

Surely *Mercator* had small reason, besides will, so worse and worse to lime himselfe: The particular Narrations of *Solinus*, and other describers of those partes, from the *Persicus sinus* and Island of the Sunne to *Carmania*, so to *Indus*, then *India intra Gangem*, then *India extra Gangem*, and so *ad Seras*, as well as *Ptolomey* his enumeration of the Rivers, Mountaines, Townes, and Head-landes, with their distances, shew plainly, that his River *Ganges* was nothing neere so farre from *Indus*: and if that mightie Continent betweene *Indus*

and *Cantam* were but *Indiamira Gangem*, *China* it selfe must then be *India extra Gangem*; and so vnlesse the Sea haue eate it vp, wee cannot guess what is become of *Sinarum Regio*, that *Ptolomey* so often mentions to lye Eastward from *India extra Gangem*. And surely if the River of *Bengala* (which *Lanschor* sayes the *Indians* doe call *Guenga* (be not *Ganges*, falling out into a Sea so well knowne, and being of that breadth and deapth & length that the *Indians* superstitiously conceiue it comes from *Paradise*, it had ill lucke to scape the mention of our *M. Ptolomey*.

In a word, the seuerall Mouths of *Ptolomey* his *Ganges*, especially the most distant, lay in the same Latitude, which is impossible for *Cantam* falling Eastward, and not full South into the Sea. Neither hath *Cantam* a Bay like *Golpho de Bengala* to answer *Sinus Gangeticus*; neither can there be, if *Cantam* were *Ganges*, beyond it Eastward any trending of Land (as *Ptolomey* writes) so farre to the

the South, that there were *Aethiopes*: Neither is there beyond *Siam* any Towne within the *Tropicke*, whereas *Ptolomey* in his 8 Booke of *Cælestiall* Observations, or Rectifications, reckons all the Cities of *India extra Gangem*, and some of *Sinarum Regio* too, to haue *Solem in vertice bis in anno*. All which, doe well agree with our opinion. But why doe wee pursue *Mercator* any further, whose first mistaking, notwithstanding all his witte and labour, brought him at last to place *Cassigara Sinarum Statio*, in 60. degrees of Northerly Latitude, which *Ptolomey* expressely layes beyond the *Equinoctiall*.

The clearer trueth is, that the River *Indus*, of *Ptolomey*, by the vniuersall consent, falles into the Ocean neere *Sambaya*, from whence proceeding Eastward, you come to his *Promontory Cory our Cape Comorj*, ouer against which lay his *Taprobane* our *Ceylan*, from thence to his *Sinus Gangeticus* our *Golphe de Bengala*, so to his River *Ganges* the *Indian Guenqa*.
then

thento our *Sumatra* his *Chryse* or *Chersonesus*, and last of all to his *Sinus Magnus*, a peece of our South Sea betweene *Pegu* or *Siam* and the Islands of Spices; into some Port whereof, the comming of some *Sima* to trade, occasioned his conceit of *Catigara Sinarum Statio*: All which against *Maginus*, and such as so easily swallow *Mercators* Coniectures, may be much better iustified then their Positions.

Now then, by this that hath been sayd, it may appeare, that *Ptolomeys Hemisphere* reacht litle beyonde *Sumatra* and *Siam*; so that not onely *China*, which by them that know it best, is sayd to trend from 22. Degrees of Nor. Latitude 700. Leagues North-east-ward, but a good part of *Cathay-China* too, remaynes for *Ptolomey* his *Terra incognita*, to make vp the 3. Howers, or 45. Degrees more of *Marinus Tyrins*: vpon whose Computation, *Columbus* especially did found his so happy and renowned enterprize.

I, but how commeth it to passe, that all our moderne Maps contract euen *Ptolomeys Hemisphere*, and make *Sumatra* to extend to litle about 150. Degrees?

Why surely by the generall mistaking of his *Laprobare*; and in particular, by a trick of the *Portingales*, the first and chiefe frequenters of those partes, they hauing by the Popes authoritie, fixt a *Meridian* at the Islands of *Cape Veras*, from which Westward the *Castilians* should haue all to 180. Degrees as themselves; the other Moytie Eastward: It fell out that the riches of the *Moluccas* cald the Islands of Spices, set them both at oddes, and the *Castilians* finding a short and easie passage from *America* thither, not onely challenged those Islandes, but some part of *India* too, to fall within their limits: for preuention whereof, to bring the *Moluccas* within their *Hemisphere*, the *Portingales* in probabilitie shortned their *Cardes*: For at the meeting of *Balos* and *Telbas*, betweens them, there was lost

lost a 7th part of the world, and the *Portingales* were they that shun'd the triall: But the Emperours occasions compelling him to yeeld to them, that else, (as the Records declare) had little right: the World hath since receiu'd the delineation of those parts from *Portingall* accompt.

But there is reason to imagine, that ere long, our skilfull frequenters of the *East Indies*, by obseruation of some one Eclipse, will teach the truth; meane time, let vs agree with the *Spaniards* the Maisters of those partes, and the Computation of our Maisters the old Geographers.

If therefore from the Meridian of the fortunate Islands, in the Paralell of 37. (which is chosen as most eminent and fit to reckon on) wee may accompt to the farthest partes of *China*, ouer against *Iapan*, lying in the same height 225. Degrees, or 15. howers, according to the Additions vnto *Gemma Frisius* Tables: there then remaine but 9. houres, or 135. Degrees, to make vp the Complement

ment; which being ouer Seas, wee know both difficult and vncertaine: But the best experience, from the coast of *China* to the most Easterne part of *Iapan*, sets downe 200.

L. From thence to the Backe of *America* in $37\frac{1}{2}$. where Sir *Francis Drake* his *Nona Albion* should bee; you haue, by the estimate of *Francis Gualle* 900. more: in all 1100. L. whereof by the *Dutch* Computation 12. by the *Spanish* 14. by the *English* 16. in that Paralell make one Degree, which last as surest, though worst for vs, we follow, and do find from *China* vnto *Nona Albion* 69. Degrees.

Now from the Meridian of the *Canaries* Westward to *Iamaica*, or to keepe our Paralell to *Virginia* by seuerall Eclipses, obserued by seuerall men, there hath beene found a difference of neare 60. Degrees or 4. Howers: so that the Remainder of the 135. is about 6. Degrees, or 300. English Miles betweene *Virginia* and *Nona Albion*.

For

For Confirmation whereof, let vs
 remember that the *Indians in Virginia*
 continually assure our people, that
 12. daies iournie wellward from the
Falls, they haue a Sea, where they
 haue some-times seene such Shippes
 as ours. Let vs remember how *Vas-*
quez de Colorado, sent to discover the
 North of *America* by the Viceroy:
Antonso de Mendoza, labouring in his
 Letters to perswade the Emperour
 what a large and ample Continent
 there was to inhabite, writeth, that
 at *Cibola*, hee was 150. L. from the
 South Sea, and a litle more from the
 North. Let vs remember how
 plainly Sir *Francis Drake* his Iornal,
 prooues that his *Nova Albion* can
 be very litle further Westward then
Aquatulco; whereby see but how
 great a part of the Backe of *America*,
 is cleane wpy't away?

But if any yet doe doubt, let him
 looke into the *Spanish Voyages*, or
 Collections of *Antonso de Herrera*
 the *Coronista Maior* for the King, and
 Contraction house, in whose de-
 scrip-

scription of those partes, the particular distaunces and bounds of *Guadalajara*, *Zacatecas*, *Nueva Viscania*, *Cimaco*, *Cobola*, and the rest, from *Compostela*, *Purification*, *S. Sebastian*, on the South Sea, as from *Mexico*, and from *Panuco* on the North, too long to set downe heere, do plainly shew, that Continent is nothing broad, how euer it be painted.

Now if any iudge we haue not altogether prooued *Asia* to extend as farre as 15. Howers, let him consider for a supplement, of what may want thereof, that the *Spaniards* reckon 20. Degrees more then we haue done heere, to the *West-Indies*; and on the other side, from *Nova Spagne*, to the *Philippinas* 1700 L. as our Sir *Francis Drake* and Maister *Camden* sh doe about 2000. farre beyond ours of *Francis Gualle*.

If therefore our Streights had been discovered about *Virginia*, to runne Westward 100. or 300. L. vnto a flowing Sea, wee thinke it might haue probably bin iudged the *Mar del-*

1 *del zur* : But lying in a Paralell more
 2 Northerly, (whereby those Leagues
 3 will take vp more Degrees) the Nor-
 4 therne backe of *America*, by the Card
 of *Antonio de Herrera*; by the Voy-
 age of *Juan de Fuca*, a Pilot that liu'd
 fourtie yeares in those Countries;
 and by the relation of some *Dutch-*
men, besides the Mappe of *Gerona*
Frisius, appearing to trende North
 Eastward.

And for any thing wee yet can
 heare, no one Voyage to the contra-
 rie, wee see not but wee may con-
 clude, that the Flood our People
 met, came from the Southerne Sea,
 and till we heare more Authentick
 reasons then of feare, grounded on
 false Cardes, beleue that our Indu-
 stry, by Gods grace, may this next
 Voyage, manifest the Prophesie of
Baptista Ramusius, touching the
 North-west passage.

FINIS.

